

A REDUCTION OF *CYPREA ANNAE* ROBERTS AND
CYPREA POLITA ROBERTS TO SYNONYMY
WITH *CYPREA SEMIPLOTA* MIGHELS

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Having examined over one hundred specimens and collected the three forms, *Cyprea polita* Roberts,¹ *Cyprea annae* Roberts,² and *Cyprea semiplota* Mighels,³ I have come to the conclusion that the characteristics used by Roberts to separate *Cyprea annae* and *Cyprea polita* from Mighel's *Cyprea semiplota* are not justifiable specific distinctions. In my opinion, Roberts's two species should be placed in synonymy with *Cyprea semiplota* Mighels.

The characteristics described by Roberts as specific distinctions appear to be individual variations. The intergradation from one of his species to the other is so fine that in borderline cases it is extremely difficult to classify the specimen. In describing *Cyprea annae*, he lists as qualities separating it from the other two species a broad flattened shape, rather more solid, and of a greyish-white color. But these characteristics appear in varying degrees of intergradation in all three forms. *Cyprea annae* Roberts is not actually a flattened form; in extreme cases the broadness of the shell might lead one to believe so, but by comparing examples of the other two species of proportional size, it will be noted that the dorsal surface has the same identical curvature. Taking into consideration the difficulty of determining how thick the shell should be before it is to be classified as Roberts's *Cyprea annae*, I believe that this characteristic is invalid in specific separation. Too, the greyish-white color is the intermediate shade of all three forms, although it grades into orange-yellow or light brown in *Cyprea polita* Roberts, and reaches a medium brown or even a blackish-brown in *Cyprea semiplota* Mighels.

The description by Roberts of *Cyprea polita* mentions such characteristics as the creamy-white color of the shell, thickly covered with minute white spots, pittings orange, particularly

¹ *Am. Jour. Conch.*, iv, p. 70, pl. 15, f. 1-3; 1868.

² *Ibid.*, p. 250, pl. 15, f. 4-6.

³ *Proc. Bost. Soc.*, ii, p. 24; 1848.

those on the extremities, base ivory-white, teeth confined to the aperture except for a short distance from each end. However, the white spots are quite characteristic of the other two forms also, although the arrangement and number of spots are variable. The description that Roberts gives of the arrangement of the teeth in *Cyprea polita* is also true of *Cyprea annae* and *Cyprea semiplota* Mighels: in all three forms they are confined to the aperture except at the extreme anterior and posterior ends, where they extend up the columella side of the base, nearly reaching the lateral margins of the shell. The base is also ivory-white or bordering on the tumid in three forms.

Additional characteristics mentioned by Mighels in describing *Cyprea semiplota* are also typical of the other two forms. These are a narrow aperture that is yellowish, and a shell that is light brown in color. According to my observations the aperture is equally narrow in the three species under discussion, and is tinged with yellow or orange. The light brown is one shade in the variable color of these forms.

The lack of notable structural difference, and the fine intergradations in structural proportions as a result of individual variation, call, in my opinion, for the reduction to synonymy of two of the specific names. Because of Mighels's priority of classification, *Cyprea polita* Roberts and *Cyprea annae* Roberts are accordingly placed in synonymy with *Cyprea semiplota* Mighels.

Cyprea semiplota Mighels

Shell pear-shaped, color creamy-orange to blackish-brown, dorsal surface sprinkled with minute white spots; columella side of the aperture angled, sometimes heavy; teeth on the columella side confined to the aperture except at the anterior and posterior extremities, where they extend over the base toward the lateral surfaces of the shell, teeth and aperture tinged with orange-yellow or brown, interstices between the teeth wide; narrow aperture, curved posteriorly; base ivory-white or tumid.

Cyprea semiplota Mighels is one of five endemic species occurring in the Hawaiian Archipelago; the others are *Cyprea tesellata* Swainson, *Cyprea sulcidentata* Gray, *Cyprae madagascariensis* Gmelin, and *Cyprae ostergaardi* Dall.